

IMPLEMENT & TRACTOR

The Business Magazine of the Agricultural, Industrial & Outdoor Power Equipment Industry

VOLUME 105, No. 11

NOV-DEC 1990



It's Stat Time Again

By SCOTT NESBITT

STATISTICS. It's a word that can make you cringe.

It's a word that conjures up images of glassy-eyed students fighting sleep in an overheated classroom as they nod off to the drone of an equally-bored teaching assistant.

You see that same kind of glazed-over expression at dealer meetings and training sessions, when the marketing guys roll out their flip

EDITOR'S NOTEBOOK

charts and overhead projectors and start getting excited about numbers.

Yet there must be something worthwhile in all those numbers.

For 52 previous years, and once again this year, *Implement & Tractor* rolls out the numbers from government and industry sources, packages them in convenient form, and lets you make your own conclusions about where the market is heading.

We call it the Market Statistics Issue, and we know it drives a portion of our readers to ask "Who cares?"

But the issue carrying all the tables is the most frequently-requested back issue during the course of the typical year, and in some years demand exceeds supply.

The statistics issue is not an unchanging thing, and this 1990 version marks the end of an era for some of this stuff.

Take the table titled "Farm Wheel Tractor Retail Sales by States." (See NOTEBOOK, pg. 4)



MANAGEMENT HEADACHES HAVE eased since Bruce Construction Machinery Company dropped CP&A to concentrate on industrial equipment, says vice president and general manager W. Aubrey Strader.

Dealership Learns Lesson:

Industrial, Ag Don't Mix

By JIM HUDSON

BRUCE CONSTRUCTION Machinery management jumped at the chance to add John Deere agricultural equipment and consumer products to their industrial equipment business in 1985.

They recently corrected that mistake.

"What looked like such a good idea never worked," said W. Aubrey Strader, vice-president and general manager in Asheville, North Carolina.

"When a CP&A dealership came available, we thought we could work it right in with our industrial business. We had the facilities already in place. We could hire more sales people. We

felt like we could make some additional money.

"But we really didn't know all the facts. Ag and industrial, we learned, are 2 different businesses," Strader said.

This was not Bruce's first foray into the agricultural markets. The company was a John Deere agricultural dealer from its beginning

(See DON'T, pg. 2)

IMPLEMENT & TRACTOR
P.O. Box 1420

MD 20814

CONGRESS INFO SVC - STE B
4520 EAST WEST HWY
BETHESDA

17002629 0THA4493433

Inside

DEPARTMENTS

Who's Who	3
Industry Update	14
Product News	15
Service Corner	20
Marketplace	28

**53rd Annual
Statistics Issue
Pages 5-13**

IMPLEMENT & TRACTOR

The Business Magazine of the Agricultural, Industrial & Outdoor Power Equipment Industry

NOV-DEC 1990
VOL. 103, NO. 11

IMPLEMENT & TRACTOR

Editorial, advertising and circulation correspondence should be addressed to: P.O. Box 1420, Clarksdale, Mississippi 38614. Telephone: 601/624-8503

EDITORIAL

Scott Nesbitt, Editor
2120 W. 25th Street, Suite H
Lawrence, Kansas 66046
Telephone: 913/841-7911
Fax: 601/627-1977

Hembree Brandon, Editorial Director
H. Scott McClure, Managing Editor

CIRCULATION

Send change of address forms and circulation inquiries to:
Implement & Tractor
P.O. Box 1420
Clarksdale, Mississippi 38614

ADVERTISING

Darrah Parker, Production Manager
P.O. Box 1420
Clarksdale, Mississippi 38614
Telephone: 601/624-8503

John Montandon
2516 Via Tejon, Suite 207
Palos Verdes Estates, CA 90274
Telephone: 213/375-0834

John Sims
13771 North Central Expressway
Dallas, TX 75243
Telephone: 214/690-0721

Mike Gonitzke
307 Green Street #5
Gainesville, GA 30501
Telephone: 404/535-1593

Kinsey Coleman
3001 Lakeview Road
Memphis, Tennessee 38116
Telephone: 901/396-9904

Midwestern and Eastern Advertising Representative:
Thompson & Associates, Inc.
20 N. Wacker Dr., Suite 1221
Chicago, Illinois 60606
Telephone: 312/726-1020

Stockwell/Midwest
1900 Erie, Suite 203
North Kansas City, Missouri 64116
Telephone: 816/587-7484
Ray Stockwell

Haruki Hirayama
EMS, Inc.
Sagami Building 2-21
Shinjuku 4-chome, Shinjuku-ku
Tokyo 160 Japan
Telephone: (03) 350-5666
Cable: EMSINCERIOO Tokyo
Telex: 2322520 EMSINC J

ADMINISTRATION

Tommy L. Keith, President and Publisher

Subscription Information: Implement & Tractor is edited for persons in the farm and industrial equipment industry who function in the areas of retail sales and service, distribution sales and service, marketing, engineering, financing, manufacturing and general management. Subscription prices: U.S. and Canada one year — \$15, three years — \$30. Single copies, \$3.50, except Annual Statistical Number, \$4; Product File Issue, \$8; Red Book Issue, \$8. Extra charge for service on back issues. Allow 6-8 weeks for change of address and new subscriptions. Foreign subscriptions: Air Mail only available. One year — \$100; three years — \$250 (U.S. currency).

Photocopy rights: Permission to photocopy for internal or personal use is granted by Farm Press Publications for libraries and others registered with the Copyright Clearance Center (CCC), provided the base fee of \$2.00 per copy of article is paid directly to CCC, 21 Congress Street, Salem, Massachusetts 01970. Special requests should be addressed to William F. Lewis at the Clarksdale, Mississippi, address.

ISSN 0019-2953 \$3.50 + 0.00

IMPLEMENT & TRACTOR (USPS 461-750, ISSN-0019-2953) is published monthly, except combined November/December issue, by Farm Press Publications, P.O. Box 1420, Clarksdale, Miss. 38614. Second class postage paid at Clarksdale, Miss., and additional mailing offices. POSTMASTER: Send Form 3579 to P.O. Box 1420, Clarksdale, Miss. 38614.

Farm Press Publications
A Division of Argus Press Holdings, Inc.

Who's Who...

A roundup of personnel changes and doings in the farm, industrial and power equipment industry.

Steve Bruggeman has been appointed president of Cat Pumps Corp., Minneapolis. He succeeds his father, William L. Bruggeman, founder and president of the firm, which makes a wide range of industrial pumps. The elder Bruggeman will continue as chief executive officer while his son assumes full administrative, marketing and sales responsibilities.

Ted Pederson, an 11-year Kubota Tractor Corp. veteran, becomes director/division manager of KTC's Northern Division.

Mike Fairless, with Kubota since 1980, to district manager for the Southern District of KTC's Central Division.

Lloyd Wilson is heading up the newly-opened Minneapolis office of Agra-Placements, Ltd., which had 3 previous offices, in West Des Moines, Iowa, Lincoln, Ill. and Peru, Ind., specializing in recruiting executives for domestic and interna-

tional agri-businesses and horticultural firms.

Michael H. Blumenthal has been named executive director of the new Scrap Tire Management Council of the Rubber Manufacturers Association. The Council will develop and promote the use of scrap tires as a valuable resource.

Dick Fotsch is named vice president and general manager for the Small Engine Division of Briggs & Stratton Corp., covering all engines B&S makes in Murray, Ky., where he resides, and at Poplar Bluff, Mo., and Milwaukee's Burleigh South (See WHO'S, pg. 32)

THIS IS THE REASON YOU'LL SWITCH TO RADIALS.

THE NEW HI-TRACTION LUG RADIAL FROM ARMSTRONG.

Compared with bias ply tires, radials have a larger 'footprint' and deeper tread depth. So, for a given size, there's more tread on the ground. Yes, they can cost more, but the extra expense is more than offset by longer tread life and fuel savings.

Still, a lot of farm equipment owners remain unconvinced.

THE CONTROVERSY IS OVER.

Now comes compelling proof of the improved performance of radial tires... fully implemented for the first time in the new Armstrong Hi-Traction Lug Radial.

Picture a tire with a whopping 18 percent improvement in traction compared with our bias ply tire. What's more, the HTL Radial delivers a 12 percent improvement in wear even compared with our own agri-tough Super Hi-Power Lug Radial! But compared with our closest competitor...well, frankly, there is no comparison.

WITH SUCH GREAT TRACTION, WHO WOULD EXPECT REDUCED VIBRATION, TOO?

The remarkable thing about the new HTL Radial is that it beats the pants off other radials for reduced tire vibration. Measured against our Super Hi-Power Lug Radial, for example, vehicle testing showed an astonishing 50 to 66 percent reduction in vibration.



HTL 113



BIAS 95

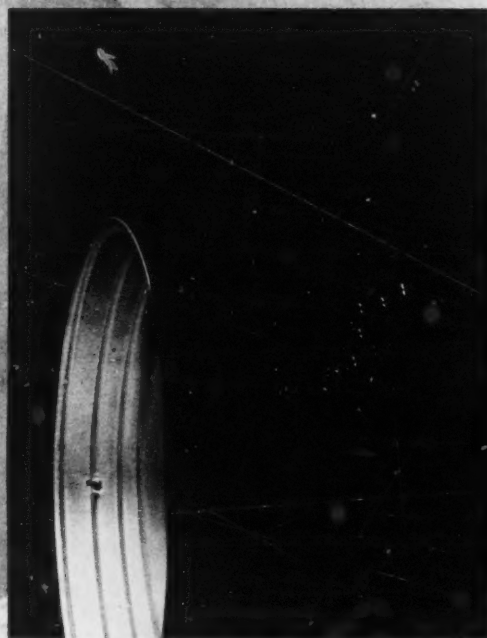
Traction Ratings, Bias Ply vs. HTL Radial

HOW ARMSTRONG'S TIRE DESIGNERS DID IT.

Three of the most important tire performance criteria are traction, vibration, and self-

cleaning ability. Ironically as you improve one aspect, trade-offs may occur with the others.

To reduce vibration, for example, Armstrong's tire design team increased the number of lugs on the HTL Radial by about 50 percent. Note in the photo above that the distance between lugs is considerably smaller, so there's a minimum of thumping as the tire rolls from lug to lug.



So far so good. But, with the lugs closer together, special design provisions had to be made to ensure that soil wouldn't clog the space between the lugs. An accomplishment verified by real-life evaluations in various types of soils.

As the HTL Radial's specially curved long bar-medium bar design evolved, it became apparent to the designers that they had achieved a breakthrough — a tire with greatly reduced vibration that not only doesn't compromise traction, but actually improves on it.

DO WE BELIEVE IN THIS TIRE?

The new HTL Radial is a significant technological achievement. One that will undoubtedly set standards in tractor tire design for years to come. But equally important, it follows in the Armstrong tradition of building the most reliable tires on or off the road. Which is why the rugged HTL Radial is covered by an eight-year standard limited warranty, the most extensive warranty in the industry. Plus it's covered for five years against field hazards and stubble damage! Nobody protects your tire investment like Armstrong.

ALL THE WAYS YOU'LL SAVE.

■ Even greater traction means you'll cover more ground in the same amount of time and save on fuel costs.

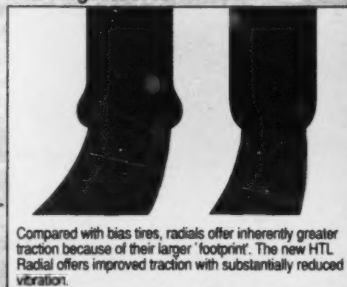
■ Slower wear-out means longer tire life.

■ Reduced vibration means fewer vibration-related equipment problems and improved operator comfort.

■ And, Armstrong's eight-year standard limited warranty will save you a lot of sleepless nights, too.

Visit your Armstrong dealer for a look at the amazing new Hi-Traction Lug Radial. And while you're there, see the complete line of Armstrong rhino-tough tires for farm, truck and passenger cars.

Tell them Tuffy the Rhino sent you.

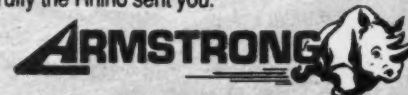


Compared with bias tires, radials offer inherently greater traction because of their larger 'footprint'. The new HTL Radial offers improved traction with substantially reduced vibration.



© 1990 Pirelli Armstrong Tire Corporation. All rights reserved.

Circle (5) on Reply Card



I&T 53RD ANNUAL MARKET STATISTICS

Principal Machines on Farms.....	6-7
U.S. Farm Wheel Tractor Retail Sales	6
Canadian Farm Wheel Tractor Retail Sales	7
Motor Vehicles, Specified Machines on U.S. Farms	8
Average Prices of Wheel Tractors	8
Farm Wheel Tractor Retail Sales by States.....	8
Retail Sales of Selected Farm Equipment	10
Dollar Value of Farm Equipment Imports by Country of Origin	10
Imports of Farm Equipment by Product	11
New Agricultural Tractor Imports.....	11
Shipments of Farm Machines and Equipment.....	12
Value of U.S. Farm Equipment Exports by Countries	12
Value of Shipments, Farm Machinery and Garden Equipment.....	13
Farm Equipment Exports by Product..	13

Commercial and Consumer Lawn & Garden Equipment Quantity and Dollar Value, 1985-1989

(Value in thousands of dollars)

	1989		1988		1987		1986		1985	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Commercial turf & grounds equip. (Including parts & attachments) (TOTAL).....	—	626,517	—	595,044	—	465,635	—	412,836	—	376,714
Commercial mowing equipment (TOTAL).....	—	496,797	—	473,509	—	390,041	—	347,482	—	317,566
Powered nonriding mowers.....	47,777	54,458	52,359	57,323	44,801	41,207	59,303	44,283	58,455	39,780
Reel mowers, riding & greens.....	13,266	116,204	11,176	86,887	10,593	71,712	7,004	44,767	15,662	50,709
Riding rotary turf mowers.....	30,131	157,875	32,466	160,449	31,458	141,644	30,102	123,975	33,105	113,674
Gang mower sections, reel & rotary.....	38,993	45,251	37,957	42,460	35,913	39,539	34,327	35,208	14,290	17,399
Flail mower units, incl. gang.....	3,223	8,426	3,327	9,450	3,302	7,038	3,332	7,550	4,578	8,521
Other mowing equipment.....	10,275	10,797	5,290	5,750	6,446	6,684	8,228	7,377	4,703	5,620
Comm. mower parts & attachments.....	—	103,786	—	111,190	—	82,217	—	84,322	—	81,863
Other comm. turf & grounds equip.	—	129,720	—	121,535	—	75,594	—	65,354	—	59,148
Tractors, trucks, sod equip., irrig. equip., seeders, spreaders.....	296,245	64,970	338,466	56,711	12,169	31,602	13,009	33,046	16,609	29,454
Aerators, spikers and pluggers.....	9,029	17,903	9,976	20,823	7,628	15,649	6,290	9,931	4,971	9,266
Dethatchers.....	9,820	6,782	10,257	6,197	4,562	2,651	2,561	1,324	3,372	1,681
Power brooms, blowers, vacuums, sweepers.....	11,637	16,862	14,257	15,542	10,285	13,554	9,630	12,929	5,742	9,634
Non-mowing equip. parts and attachments.....	—	23,203	—	22,202	—	12,138	—	8,124	—	9,113
Consumer lawn & garden equip. (TOTAL).....	—	3,744,242	—	3,936,959	—	3,853,665	—	3,385,840	—	2,995,516
Consumer nonriding l & g. snow equip.	15,671,980	1,746,793	16,018,765	1,771,012	16,129,251	1,777,291	14,100,587	1,581,431	14,946,154	1,529,044
Mowers, reel, push & powered.....	28,467	10,675	41,804	17,648	32,537	9,953	73,975	26,305	58,132	19,909
Mowers, rotary, push.....	3,986,630	536,075	3,852,716	524,698	4,115,380	553,670	3,523,116	481,916	3,567,467	477,102
Mowers, rotary, self-prop. & all electric.....	1,737,296	412,323	1,961,681	418,579	2,051,026	497,511	1,754,663	374,969	1,671,101	350,324
Rotary tillers, 2-wheel tractors.....	389,563	150,651	345,232	138,716	318,758	135,298	324,185	144,310	352,810	158,694
Snow throwers, single stage.....	170,314	45,610	199,829	52,568	359,343	104,288	336,603	75,227	282,386	60,750
Snow throwers, dual stage.....	107,632	64,226	186,763	107,630	212,852	101,279	201,826	107,829	156,669	82,168
Edgers, trimmers, power, fixed blade.....	436,640	34,713	507,764	44,474	528,561	46,011	468,642	43,411	582,588	49,842
Edgers, trimmers, power, elec. & other.....	4,454,917	245,100	4,426,293	221,235	4,411,536	162,625	4,422,903	170,427	3,912,956	155,931
Shredders, shredder-grinders.....	76,776	29,374	72,330	26,425	59,545	19,567	67,211	26,048	55,770	26,215
Yard vacuum & blowers.....	1,575,019	97,655	1,393,710	91,147	939,451	56,863	877,004	50,012	1,125,579	56,836
Lawn sweepers (non-attached type).....	36,114	5,170	44,821	6,022	52,403	5,935	74,468	8,960	—	—
Other nonriding l & g. snow equip.	2,672,612	115,221	2,985,822	121,870	3,048,129	84,291	1,975,991	72,017	3,180,696	91,273
Consumer riding l & g. snow equip.	1,183,387	1,392,504	1,235,608	1,511,984	1,257,788	1,505,611	1,058,636	1,255,382	1,035,156	1,130,353
Lawn tractors, riders, front engine.....	817,568	853,542	734,227	765,387	738,679	809,273	621,919	677,300	573,741	556,177
Lawn tractors, riders, rear engine.....	271,622	275,421	364,047	344,703	399,730	381,223	307,662	266,528	348,422	296,576
Garden tractors and other riding equip.	94,197	263,541	137,334	401,894	119,379	315,115	129,055	311,824	112,146	276,105
Nonriding parts & attachments.....	—	229,533	—	222,851	—	150,907	—	161,779	—	150,044
Riding equip. parts & attachments.....	—	375,412	—	431,112	—	419,856	—	387,248	—	186,075

SOURCE: U.S. Dept. of Commerce Census Bureau Industrial Report MA35A(89)-1, "Farm Machinery and Garden Equipment," issued October 1990, and previous years' MA35A reports. In some categories, I&T has combined data to save space.

Principal Machines on Farms, by State — 1990

STATE	WHEEL TRACTORS			SELF-PROPELLED COMBINES			CORN HEADS		POWER	MANURE	CORN & COTTON	GRAIN	MOLDBOARD	SIDE
	1982 Census Number	1987 Census Number	Estimated July 1, 1990 Number	1982 Census Number	1987 Census Number	Estimated July 1, 1990 Number	1982 Census Number	Estimated July 1, 1990 Number	ELEVATORS Estimated July 1, 1990 Number	SPREADERS Estimated July 1, 1990 Number	PLANTERS Estimated July 1, 1990 Number	DRILLS Estimated July 1, 1990 Number	PLOWS Estimated July 1, 1990 Number	DELIVER RAKES Estimated July 1, 1990 Number
Maine.....	13,569	14,260	14,750	320	540	540	181	160	4,790	2,795	275	755	7,540	5,185
New Hampshire.....	5,097	5,052	5,175	8	23	20	50	40	2,260	1,785	250	50	2,575	2,195
Vermont.....	15,274	15,295	15,415	76	128	125	374	355	7,290	5,635	1,415	280	8,715	6,545
Massachusetts.....	9,956	13,160	13,520	23	60	60	145	140	3,270	2,035	775	90	5,215	3,120
Rhode Island.....	1,364	1,556	1,610	6	8	5	13	10	450	235	85	25	605	280
Connecticut.....	8,421	9,218	9,825	53	84	80	98	75	3,805	2,190	910	70	4,950	2,200
New York.....	119,498	115,509	115,630	6,030	7,887	7,910	3,904	3,950	63,420	36,010	17,435	23,925	69,010	42,480
New Jersey.....	20,554	23,375	23,680	1,011	1,096	1,100	593	580	5,580	2,155	2,130	2,190	14,380	3,560
Pennsylvania.....	136,505	142,342	142,530	9,707	13,744	13,780	5,408	5,600	67,560	37,255	30,045	35,910	87,660	43,810
Delaware.....	8,012	7,128	7,490	1,342	1,280	1,300	1,006	955	3,585	1,580	1,880	1,810	5,530	930
Maryland.....	36,951	37,672	38,210	3,279	3,579	3,625	2,840	2,770	14,900	7,505	7,665	7,915	24,795	7,970
NORTHEAST.....	375,201	384,567	387,835	21,855	28,429	28,545	14,612	14,635	176,910	99,180	62,865	73,020	230,975	118,275
Ohio.....	193,367	197,852	197,320	33,200	35,908	36,150	26,403	26,200	116,145	50,385	56,875	57,200	140,905	49,855
Indiana.....	167,563	171,059	171,700	34,646	36,151	36,450	31,391	29,100	115,280	44,555	58,320	46,595	120,330	36,795
Illinois.....	262,112	263,319	262,845	61,411	60,208	61,010	55,636	53,000	175,520	65,170	85,315	58,760	156,095	47,745
Iowa.....	305,334	302,392	301,755	57,726	60,004	60,510	57,046	56,400	185,370	88,945	94,875	54,505	185,985	80,700
Missouri.....	193,758	196,774	195,955	32,957	33,765	34,015	21,834	20,200	82,180	49,995	45,445	47,370	131,100	47,655
CORN BELT.....	1,122,134	1,131,396	1,129,575	219,940	226,036	228,135	192,310	184,900	674,495	299,050	340,830	264,430	734,415	262,750
Michigan.....	146,655	143,734	144,455	21,060	23,587	23,660	13,583	14,300	82,375	32,875	34,490	46,015	113,605	39,100
Wisconsin.....	243,827	250,979	250,105	19,215	25,315	25,390	11,939	13,250	129,950	75,480	60,815	58,660	145,525	81,755
Minnesota.....	264,581	265,669	265,775	45,847	51,183	51,490	31,098	31,600	145,550	68,285	73,205	68,015	156,960	79,065
LAKE STATES.....	655,063	660,382	660,335	86,122	100,085	100,540	56,620	59,150	357,875	176,640	168,510	172,690	416,090	199,920
North Dakota.....	108,103	111,746	111,705	27,546	30,502	30,700	2,708	3,030	70,535	18,580	13,640	53,835	57,570	20,620
South Dakota.....	105,699	106,997	106,910	16,961	19,025	19,175	9,606	10,300	62,635	25,960	27,605	30,485	57,765	20,995
Nebraska.....	164,308	171,501	171,195	34,032	35,024	35,125	25,484	25,240	97,070	39,780	41,215	39,075	81,985	31,895
Kansas.....	149,870	150,647	151,320	46,662	43,801	44,120	8,321	7,250	103,560	33,165	19,985	63,480	83,235	32,755
GREAT PLAINS.....	527,980	540,891	541,130	125,201	128,352	129,120	48,119	45,820	333,800	117,485	102,445	186,875	280,555	106,265
West Virginia.....	27,110	27,690	27,840	562	874	875	471	480	6,245	7,515	4,750	3,325	17,155	8,740
Kentucky.....	163,176	167,810	169,565	11,466	12,572	12,630	9,924	10,250	24,110	24,795	34,975	10,275	97,465	28,335
Tennessee.....	126,365	126,678	127,055	11,227	10,260	10,290	6,508	6,680	14,865	18,090	47,265	12,830	63,245	22,580
Virginia.....	88,511	84,991	84,760	6,224	6,993	7,030	5,061	5,130	18,360	19,355	23,535	15,475	58,725	21,525
North Carolina.....	131,488	121,125	121,530	13,820	13,617	13,660	10,618	10,200	20,120	18,945	66,385	20,745	56,420	14,700
APPALACHIAN.....	536,650	528,294	530,750	42,299	44,316	44,485	32,582	32,740	83,700	88,700	176,910	62,650	293,010	55,880
South Carolina.....	44,338	40,783	41,610	6,263	5,077	5,125	3,808	3,600	4,660	3,495	27,815	10,705	9,805	5,430
Georgia.....	75,505	73,732	73,635	8,980	8,831	8,890	6,438	5,735	13,650	5,930	35,355	9,235	27,875	9,780
Florida.....	52,346	158,854	62,670	1,742	1,638	1,645	1,307	1,330	3,615	1,065	5,420	1,600	18,070	1,770
Alabama.....	66,330	66,163	67,580	6,935	5,870	5,880	3,630	3,600	11,200	3,955	38,525	6,490	20,855	7,015
SOUTHEAST.....	238,519	239,532	245,495	23,920	21,416	21,540	15,183	14,265	33,125	14,445	107,115	28,030	76,605	23,995
Mississippi.....	70,139	62,506	63,280	9,695	7,371	7,400	861	950	7,660	4,515	47,845	7,640	26,340	9,000
Louisiana.....	56,883	53,568	54,405	8,468	6,567	6,625	286	240	2,500	2,600	15,140	6,835	19,705	5,810
Arkansas.....	81,556	83,111	82,985	12,891	10,831	10,820	221	190	9,355	6,350	19,885	12,200	43,545	9,700
DELTA STATES.....	208,578	199,185	200,670	31,054	24,769	24,845	1,368	1,380	19,515	13,465	83,870	26,675	89,590	24,510
Oklahoma.....	99,934	106,518	106,295	17,299	15,781	15,810	600	500	24,975	8,250	8,405	29,810	72,855	18,445
Texas.....	264,740	288,018	287,105	21,049	21,260	21,350	3,913	3,875	39,750	15,655	50,535	46,695	83,330	21,425
S. Plains.....	364,674	394,536	393,400	38,348	37,041	37,160	4,513	4,375	64,725	23,905	58,940	76,505	156,185	39,870
Montana.....	54,666	56,648	56,470	12,038	12,025	12,060	89	70	27,780	9,720	1,000	20,165	25,885	12,965
Idaho.....	50,575	54,534	54,965	9,309	9,495	9,550	344	320	24,250	12,120	2,430	14,660	31,430	15,180
Wyoming.....	20,673	20,360	20,580	1,991	2,127	2,130	221	230	4,985	4,160	870	3,905	14,755	4,890
Colorado.....	56,141	59,043	59,440	7,994	8,469	8,510	2,618	2,590	24,975	12,370	5,685	14,565	24,710	13,350
New Mexico.....	17,455	19,162	19,260	1,346	1,541	1,535	308	320	2,545	2,015	2,890	1,840	8,260	3,940
Arizona.....	12,262	13,364	14,070	369	382	390	94	90	1,780	855	1,735	1,345	3,170	1,320
Utah.....	21,613	23,985	24,595	1,591	1,754	1,755	225	220	9,970	6,705	1,550	5,195	14,275	8,770
Nevada.....	5,160	5,768	5,780	234	294	285	19	20	930	985	60	300	2,400	1,400
MT. STATES.....	238,545	252,864	255,160	34,872	36,087	36,215	3,918	3,860	97,215	48,930	16,220	61,975	124,885	61,815
Washington.....	59,377	63,139	63,580	8,314	7,996	8,020	558	580	21,530	12,760	1,675	16,300	34,900	12,780
Oregon.....	53,243	55,813	56,050	6,235	6,442	6,470	209	220	17,370	11,285	1,040	11,220	33,920	11,240
California.....	139,735	153,271	158,175	6,102	6,087	6,130	1,123	1,130	24,005	13,275	8,420	8,435	56,705	12,965
PACIFIC.....	252,355	272,223	277,805	20,651	20,525	20,620	1,890	1,930	62,925	37,320	11,135	35,955	125,525	36,985
TOTAL.....	4,519,699	4,603,870	4,622,155	644,262	667,056	671,205	369,115	363,055	1,904,285	919,120	1,128,840	788,805	2,527,835	970,265

*Not reported separately. 'Cutter bar type only. 'Shear-bar type. 'Does not include windrowers with conditioning rolls. 'Includes engines used for stationary work and number of power units not elsewhere classified.

Source: U.S. Department of Commerce Census Bureau Census of Agriculture, 1987 and 1982. Estimates based on interpretation of data from that census, Census Bureau Current Industrial Reports, and various industry and private data sources.

U.S. Farm Wheel Tractor Retail Sales, 1985-1989

	1985	1986	1987	1988	1989
2-Wheel Drive					
Under 40 hp	57,214	61,648	59,902	54,741	46,926
40 & Under 100 hp	37,847	30,848	30,718	33,160	34,910
100 & Under 140 hp	7,300	5,149	5,089	4,320	5,214
140 hp & Over	10,400	9,113	10,822	11,802	15,369
Total 2-Wheel Drive	112,761	106,758	106,531	104,023	102,419
4-Wheel Drive					
Under 200 hp	1,087	595	602	998	1,125
200 hp & Over	1,825	1,442	1,051	1,731	3,026
Total 4-Wheel Drive	2,912	2,037	1,653	2,729	4,151
TOTAL Farm Wheel Tractors	115,673	108,795	108,184	106,752	106,570

SOURCE: Equipment Manufacturers Institute (formerly Farm & Industrial Equipment Institute).

POWER TRACTOR MOWERS*	PICK-UP BALERS			-FIELD FORAGE HARVESTERS*		MOWER CONDITIONERS*			MOTOR TRUCKS			INTERNAL COMBUSTION ENGINES*	CHAIN SAWS
	Estimated July 1, 1990 Number	1982 Census Number	1987 Census Number	Estimated July 1, 1990 Number	1982 Census Number	Estimated July 1, 1990 Number	1982 Census Number	1987 Census Number	Estimated July 1, 1990 Number	1982 Census Thousands	1987 Census Thousands	Estimated July 1, 1990 Thousands	Estimated July 1, 1990 Number
5,810	3,047	2,925	2,920	1,181	1,220	2,353	2,326	2,330	12.2	12.2	12.1	1,220	7,115
2,655	1,259	1,207	1,210	544	560	960	963	975	4.1	3.9	3.8	1,140	2,350
7,895	4,167	3,882	3,890	2,569	2,735	3,866	3,706	3,730	7.5	7.3	7.2	1,585	5,915
3,485	1,704	1,993	2,005	1,083	1,105	1,533	1,783	1,795	9.4	11.0	11.1	1,640	4,310
280	205	196	195	93	95	146	245	245	1.3	1.3	1.3	165	595
3,055	1,508	1,595	1,600	773	805	1,318	1,506	1,530	6.8	6.9	6.8	1,435	3,615
48,575	28,078	26,136	26,190	19,040	19,560	25,603	25,229	25,610	60.5	56.7	56.8	19,190	47,795
4,015	2,260	2,467	2,480	1,165	1,180	2,386	2,641	2,655	15.2	16.1	16.2	2,115	5,685
53,855	37,257	37,180	37,280	18,078	18,430	29,456	32,352	32,675	66.1	67.1	67.2	18,255	41,880
930	531	492	500	249	255	519	474	475	6.2	6.0	6.0	850	2,410
9,970	5,719	6,126	6,150	2,670	2,730	5,136	5,638	5,720	25.9	24.3	24.4	4,130	11,665
140,525	85,735	84,199	84,420	47,465	48,675	73,276	76,863	77,740	215.2	212.8	212.9	51,725	133,335
56,940	39,754	38,910	38,820	11,090	11,270	26,143	29,717	29,950	107.8	103.9	103.8	17,500	58,035
44,520	23,947	25,191	25,270	6,917	6,990	15,583	18,613	18,830	112.2	111.2	111.3	18,080	62,070
62,695	30,463	30,000	29,940	9,972	10,080	21,867	23,144	23,350	150.6	144.3	144.5	26,905	67,500
94,610	47,776	46,867	46,950	17,638	18,100	28,401	31,333	31,710	147.7	143.4	143.5	28,645	53,650
76,440	48,662	48,649	48,740	8,055	8,110	26,527	28,982	29,410	159.7	159.7	160.2	29,580	89,880
335,205	190,602	189,617	189,720	53,672	54,550	118,521	131,789	133,250	678.0	662.9	663.3	120,710	331,135
42,260	25,051	24,924	24,910	11,809	12,050	21,055	21,051	21,140	80.3	77.2	77.2	16,275	43,425
91,405	58,042	56,739	56,870	43,880	44,810	51,630	52,292	52,860	99.5	97.2	97.1	31,185	88,135
85,080	51,038	49,402	49,500	23,803	24,225	32,050	34,770	35,050	143.8	138.8	139.0	42,325	63,020
218,745	134,131	131,065	131,280	79,492	81,085	104,735	108,113	109,050	323.6	313.2	313.3	89,785	194,580
35,955	16,628	17,690	17,700	4,839	4,925	6,181	7,611	7,690	101.1	106.3	106.4	31,895	4,070
41,990	17,966	18,928	18,960	10,568	10,775	6,958	7,980	8,060	68.0	73.9	74.0	21,155	3,135
48,570	18,906	19,603	19,630	12,538	12,690	15,497	16,767	16,910	118.9	127.2	127.3	28,930	13,400
47,125	31,998	31,892	31,850	9,367	9,435	18,932	20,167	20,310	159.4	159.3	159.4	37,290	22,105
173,640	85,498	88,113	88,140	37,312	37,825	47,568	52,525	52,970	447.4	466.7	467.1	119,270	42,710
16,565	10,550	11,233	11,260	2,323	2,350	6,033	6,548	6,590	20.5	19.7	19.6	4,530	20,695
44,620	35,143	38,418	38,520	7,910	8,080	23,805	28,233	28,580	125.2	122.4	122.5	14,565	42,455
47,820	26,506	29,438	29,520	6,313	6,380	18,734	22,007	22,250	104.7	101.1	101.2	11,225	56,285
29,180	21,805	22,152	23,220	6,209	6,425	14,659	16,094	16,240	68.0	63.8	63.7	10,860	46,055
29,655	12,752	13,954	14,010	3,502	3,560	10,888	11,965	12,080	103.3	94.2	94.1	14,135	82,930
167,840	106,756	116,195	116,510	26,257	26,795	74,119	84,847	85,740	421.7	401.2	401.1	55,315	248,420
9,125	4,823	5,301	5,340	1,260	1,285	4,033	4,500	4,540	34.6	31.8	31.9	5,565	23,425
15,205	10,407	11,175	11,215	2,717	2,740	9,465	11,111	11,160	72.6	68.6	68.7	11,475	32,310
3,475	3,754	3,742	3,745	861	875	7,591	7,736	7,760	51.2	51.6	51.7	10,955	7,400
14,875	11,322	13,346	13,380	2,112	2,125	8,212	10,780	10,800	67.4	65.8	65.7	9,330	30,510
42,680	30,306	33,564	33,680	6,950	7,025	29,301	34,127	34,260	225.8	217.8	218.0	37,325	93,645
19,680	10,509	10,222	10,215	1,927	1,940	7,949	8,029	8,040	59.0	50.6	50.7	8,985	36,020
9,930	6,425	6,725	6,740	1,327	1,340	6,698	6,723	6,740	44.3	39.7	39.6	10,695	19,760
19,015	13,994	15,596	15,650	1,634	1,635	10,035	11,436	11,495	79.3	79.4	79.4	12,120	30,355
48,625	30,928	32,543	32,605	4,888	4,915	24,682	26,188	26,275	182.6	169.7	169.7	31,800	86,135
29,750	22,690	24,820	25,000	2,491	2,500	17,107	18,194	18,320	122.8	126.3	126.3	18,160	9,785
43,210	33,736	41,208	41,360	5,109	5,175	39,629	47,054	47,390	249.9	267.8	267.9	54,205	19,125
72,960	56,426	66,028	66,360	7,600	7,675	56,736	65,248	65,710	372.7	394.1	394.2	72,365	28,910
19,640	12,468	13,482	13,530	2,429	2,450	8,102	9,429	9,460	68.2	72.6	72.7	16,535	11,655
19,580	12,210	12,101	12,025	2,384	2,410	8,515	9,093	9,115	57.1	59.1	59.1	13,535	13,010
5,630	5,066	5,181	5,195	1,222	1,230	3,904	4,207	4,220	22.1	23.1	23.2	5,355	3,155
14,440	10,365	11,240	11,320	3,503	3,525	7,040	8,668	8,700	63.0	68.1	68.1	17,395	6,075
4,320	3,403	3,280	3,300	802	815	2,395	2,711	2,720	24.6	27.2	27.2	6,505	2,965
1,860	1,042	1,138	1,145	348	360	861	1,032	1,035	16.6	16.6	16.5	4,450	505
9,925	6,965	7,076	7,130	1,978	2,045	5,547	6,031	6,050	23.3	25.7	25.8	5,645	2,330
1,430	1,598	1,791	1,800	437	450	1,314	1,384	1,390	6.5	7.3	7.2	1,320	590
76,825	53,117	55,289	55,445	13,103	13,285	37,678	42,555	42,690	281.4	299.7	299.8	70,740	40,285
19,015	9,518	9,782	9,850	3,060	3,120	9,838	9,930	9,960	69.2	69.7	69.8	14,135	22,430
17,890	9,730	9,565	9,560	2,555	2,595	8,528	9,215	9,240	61.2	61.3	61.4	18,330	25,465
21,655	6,725	6,697	6,715	2,715	2,810	9,299	10,570	10,580	147.9	157.6	157.6	54,920	31,515
58,560	25,973	26,044	26,125	8,330	8,525	27,665	29,715	29,780	278.3	288.8	288.8	87,385	79,410
1,335,605	799,472	822,657	824,285	285,069	290,355	594,281	651,970	657,465	3,426.7	3,426.7	3,428.2	736,420	1,278,565

Canadian Farm Wheel Tractor Retail Sales, 1985-1989

2-Wheel Drive	1985	1986	1987	1988	1989
Under 40 hp	3,964	4,307	4,680	4,207	3,940
40-99 hp	8,480	9,382	9,021	9,344	7,881
100 hp & Over	4,856	3,451	3,065	2,333	2,953
Total 2-Wheel Drive	17,300	17,140	16,766	15,884	14,774
Total 4-Wheel Drive	2,525	1,609	984	1,337	1,454
TOTAL Farm Wheel Tractors	19,825	18,749	17,750	17,221	16,228

SOURCE: Canadian Farm & Industrial Equipment Institute.

Motor Vehicles and Specified Machines on U.S. Farms and Average Prices of Wheel Tractors, January 1, Designated Years

YEAR	TRACTORS (exclusive of steam & garden) ¹ Thousands	MOTOR TRUCKS Thousands	GRAIN COMBINES Thousands	CORN PICKERS and PICKER SHELLERS Thousands	PICK-UP BALERS Thousands	FIELD FORAGE HARVESTERS Thousands	GARDEN TRACTORS and MOTOR TILLERS ² Thousands	WHEEL TRACTORS WHOLESALE PRICES ³ Per Unit Dollars	Horsepower Dollars
1965.....	4,787	3,030	910	690	751	316	699	\$ 3,541	\$ 56
1970.....	4,619	2,978	790	635	708	304	805	\$ 5,560	\$ 76
1980.....	4,598	3,367	653	592	759	293	933	\$18,139	\$166
1981.....	4,573	3,385	650	587	774	291	938	\$23,308	\$199
1982.....	4,547	3,405	647	582	788	288	942	\$25,941	\$204
1983.....	4,520	3,427	644	576	799	285	944	\$34,198	\$237
1984.....	4,551	3,428	651	572	804	291	946	\$37,434	\$261
1985.....	4,564	3,428	658	568	810	295	947	\$40,730	\$290
1986.....	4,577	3,429	660	560	815	299	948	—	—
1987.....	4,590	3,427	663	554	819	298	949	—	—
1988.....	4,604	3,427	667	550	823	296	950	—	—
1989.....	4,613	3,426	668	548	825	294	952	—	—
1990.....	4,621	3,427	670	547	825	291	951	—	—

SOURCE: Various reports of the U.S. Department of Agriculture and the U.S. Department of Commerce Census Bureau. On-farm data after 1970, except 1975 and 1979, are estimated by I&T. Consists of wheel and crawler tractors. ² Motor tillers included after 1964. ³ Estimated at wholesale level by dividing Value of Manufacturers' Shipments by Units Shipped and by Maximum Belt Horsepower data as published in U.S. Department of Commerce Census Bureau Current Industrial Reports in the MA35A series; data not available after 1985.

Note: Data from 1978 Census (Jan. 1, 1979 above) and later years reflect changes in sample coverage and are not fully compatible with earlier years.

Farm Wheel Tractor Retail Sales By State, 1985-1989

State	1985			1986			1987			1988			1989		
	2-wheel Drive	4-wheel Drive	Total Tractors	2-wheel Drive	4-wheel Drive	Total Tractors	2-wheel Drive	4-wheel Drive	Total Tractors	2-wheel Drive	4-wheel Drive	Total Tractors	2-wheel Drive	4-wheel Drive	Total Tractors
Alabama.....	2,872	2	2,874	3,041	—	3,041	2,943	1	2,944	2,959	2	2,961	4	2,874	2,878
Alaska.....	39	—	39	22	—	22	20	—	20	12	—	12	—	18	18
Arizona.....	1,240	29	1,269	657	16	673	638	2	640	677	8	685	20	805	825
Arkansas.....	3,683	70	3,753	3,154	55	3,209	3,083	31	3,114	3,145	105	3,250	178	3,442	3,620
California.....	4,931	74	5,005	5,138	73	5,211	4,970	49	5,019	5,963	87	6,050	235	5,971	6,207
Colorado.....	983	89	1,072	711	50	761	682	59	741	750	98	848	109	795	904
Connecticut.....	715	1	716	937	—	937	1,091	1	1,092	1,065	—	1,065	—	674	674
Delaware.....	286	7	293	351	6	357	320	4	324	369	12	381	17	409	426
Florida.....	4,543	30	4,573	4,732	31	4,763	4,375	55	4,430	4,615	68	4,683	98	4,235	4,333
Georgia.....	5,242	5	5,247	5,077	6	5,083	5,173	3	5,176	4,644	5	4,649	11	4,491	4,502
Hawaii.....	126	9	135	142	4	146	149	4	153	194	2	196	4	206	210
Idaho.....	786	83	869	483	35	518	497	17	514	490	23	513	71	805	876
Illinois.....	3,327	252	3,579	3,182	155	3,337	3,204	116	3,320	3,070	173	3,243	322	3,364	3,686
Indiana.....	2,789	113	2,902	2,784	68	2,852	2,712	46	2,758	2,348	100	2,448	195	2,694	2,889
Iowa.....	1,894	68	1,962	2,022	69	2,091	2,433	64	2,497	2,516	111	2,627	161	2,489	2,650
Kansas.....	1,739	248	1,987	1,585	134	1,719	1,591	132	1,723	1,778	268	2,046	293	1,767	2,060
Kentucky.....	3,044	23	3,067	2,643	11	2,654	2,519	8	2,527	2,506	14	2,520	34	2,923	2,957
Louisiana.....	3,419	66	3,485	2,602	15	2,617	2,430	23	2,453	2,212	66	2,278	79	2,297	2,375
Maine.....	625	—	625	806	—	806	824	—	824	903	—	903	1	695	696
Maryland.....	2,139	3	2,142	2,081	1	2,082	2,279	2	2,281	2,022	3	2,025	8	1,869	1,877
Massachusetts.....	783	—	783	999	—	999	1,188	—	1,188	1,043	2	1,045	—	650	650
Michigan.....	2,975	74	3,049	3,051	51	3,102	2,624	34	2,658	2,782	56	2,838	104	2,713	2,817
Minnesota.....	1,714	202	1,916	1,651	183	1,834	1,816	153	1,969	1,777	227	2,004	311	1,965	2,276
Mississippi.....	3,172	20	3,192	2,516	7	2,523	2,317	16	2,333	2,351	21	2,372	31	2,471	2,502
Missouri.....	3,159	35	3,194	3,290	38	3,328	3,266	43	3,309	3,268	97	3,365	119	3,056	3,175
Montana.....	602	122	724	323	103	426	340	76	416	347	79	426	147	443	590
Nebraska.....	963	63	1,026	1,258	66	1,324	1,314	54	1,378	1,585	90	1,675	146	1,614	1,760
Nevada.....	113	4	117	102	2	104	99	1	100	87	1	88	3	111	114
New Hampshire.....	946	—	946	1,139	—	1,139	1,293	—	1,293	1,117	1	1,118	1	725	726
New Jersey.....	1,062	1	1,063	1,275	—	1,275	1,337	—	1,337	1,395	1	1,396	4	1,068	1,072
New Mexico.....	529	18	547	418	9	427	444	5	449	456	6	462	9	455	464
New York.....	3,717	21	3,738	4,065	24	4,089	4,074	6	4,080	3,937	16	3,953	37	3,410	3,447
North Carolina.....	4,478	9	4,487	4,511	7	4,518	5,334	3	5,337	5,218	4	5,222	27	4,955	4,982
North Dakota.....	917	351	1,268	892	292	1,184	1,092	223	1,315	623	285	908	397	805	1,202
Ohio.....	4,537	56	4,593	4,364	67	4,431	4,276	25	4,301	3,758	33	3,791	85	3,783	3,868
Oklahoma.....	2,203	167	2,370	1,899	82	1,981	1,857	81	1,938	1,729	164	1,893	208	1,682	1,890
Oregon.....	1,606	36	1,642	1,699	24	1,723	1,579	11	1,590	1,612	28	1,640	60	1,720	1,780
Pennsylvania.....	4,095	16	4,111	4,524	15	4,539	4,640	9	4,649	4,462	11	4,473	18	4,007	4,025
Rhode Island.....	97	—	97	117	—	117	119	—	119	115	—	115	—	83	83
South Carolina.....	2,171	5	2,176	2,033	1	2,034	2,127	2	2,129	2,646	5	2,651	8	2,465	2,473
South Dakota.....	809	158	967	934	149	1,083	1,130	118	1,248	837	179	1,016	223	1,023	1,246
Tennessee.....	4,522	16	4,538	4,207	13	4,220	4,472	6	4,478	4,015	15	4,030	34	3,814	3,848
Texas.....	13,252	192	13,444	9,849	77	9,926	8,183	95	8,278	6,839	150	6,989	146	6,718	6,864
Utah.....	625	6	631	480	4	484	308	1	309	283	5	288	8	342	350
Vermont.....	600	2	602	625	—	625	639	—	639	612	—	612	1	580	581
Virginia.....	3,253	5	3,258	3,309	6	3,315	3,704	1	3,705	3,722	2	3,724	3	3,579	3,582
Washington.....	1,652	83	1,735	1,450	39	1,489	1,433	30	1,463	1,325	53	1,378	87	1,672	1,714
West Virginia.....	685	—	685	925	1	926	850	—	850	685	—	685	1	631	632
Wisconsin.....	2,615	60	2,675	2,225	41	2,266	1,900	23	1,923	1,844	40	1,884	59	2,373	2,432
Wyoming.....	168	18	186	149	7	156	131	8	139	105	12	117	25	165	190
U.S. Govt.....	13	—	13	29	—	29	183	2	185	368	1	369	1	54	55
Miscellaneous.....	306	—	306	250	—	250	529	—	529	835	—	835	5	509	515
TOTAL.....	112,761	2,912	115,673	106,758	2,037	108,795	106,531	1,653	108,184	104,017	2,729	106,746	4,151	102,419	106,570

Source: Equipment Manufacturers Institute (formerly Farm & Industrial Equipment Institute). Figures do not include garden tractors, motor tillers or contractors' off-highway equipment.

Retail Sales, By State, of Selected Farm Equipment, Jan.-Dec., 1987-1989¹

STATE	(In Units)																	
	COMBINES			HAY BALERS ²			WINDROWERS			GRINDER-MIXERS			SHEAR-BAR FORAGE HARVESTERS ³			MOWER-CONDITIONERS ALL-TYPES		
	SELF-PROPELLED						SELF-PROPELLED											
	1987	1988	1989	1987	1988	1989	1987	1988	1989	1987	1988	1989	1987	1988	1989	1987	1988	1989
Alabama	10	15	16	89	86	80	—	—	1	—	—	1	28	27	28	9	2	3
Alaska	—	—	—	2	2	—	—	1	—	—	1	—	—	1	—	—	3	—
Arizona	4	2	8	23	11	15	32	30	37	33	30	41	—	—	1	5	1	7
Arkansas	244	250	396	68	103	124	—	3	6	—	3	6	5	15	12	4	—	1
California	41	47	86	65	67	70	128	195	199	142	224	220	2	—	3	34	26	34
Colorado	81	83	94	138	164	206	57	64	77	62	74	106	11	8	12	5	20	10
Connecticut	—	—	—	19	37	22	—	—	—	—	—	—	—	—	—	17	18	12
Delaware	8	17	41	16	13	14	—	1	—	—	—	—	—	—	—	3	6	5
Florida	3	5	16	42	54	55	1	—	1	—	—	1	3	5	4	6	4	20
Georgia	47	73	114	135	122	95	—	1	—	—	—	—	26	31	39	19	12	14
Hawaii	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Idaho	70	43	106	130	175	251	85	84	88	89	94	127	2	4	2	11	16	22
Illinois	940	653	1,164	117	148	174	4	3	5	6	4	5	209	210	191	61	76	61
Indiana	542	397	631	139	149	174	1	7	10	1	8	11	182	174	138	45	15	56
Iowa	881	833	1,030	102	157	211	28	12	20	30	15	29	553	595	480	72	94	98
Kansas	467	457	622	103	111	160	66	99	100	71	105	130	46	65	62	27	29	55
Kentucky	66	73	130	168	149	196	2	—	—	2	—	—	60	90	76	48	43	47
Louisiana	35	77	130	38	53	49	—	—	—	—	—	—	4	6	6	5	—	4
Maine	—	—	4	35	27	29	—	—	—	—	—	—	—	—	—	19	14	20
Maryland	30	42	91	73	81	63	7	10	9	7	10	11	13	11	11	34	24	31
Massachusetts	—	—	—	25	28	37	—	—	—	—	—	—	—	2	—	10	17	9
Michigan	129	81	144	125	142	222	9	13	18	8	14	26	83	60	68	100	104	130
Minnesota	457	374	581	233	314	451	50	54	57	57	53	71	175	222	211	174	181	228
Mississippi	78	89	180	44	44	39	—	—	—	—	—	—	11	10	4	7	7	4
Missouri	391	306	451	179	225	272	4	5	3	5	4	4	88	133	133	20	26	31
Montana	140	59	130	90	82	113	88	92	110	113	117	180	7	18	15	19	16	19
Nebraska	591	597	643	52	62	75	83	66	90	95	86	113	121	174	150	56	78	73
Nevada	—	—	—	17	12	22	14	22	35	19	24	39	—	—	—	7	1	6
New Hampshire	—	—	—	43	46	31	—	—	—	—	—	—	1	—	—	12	11	8
New Jersey	4	8	10	21	24	28	—	—	2	—	—	3	6	3	1	7	6	8
New Mexico	3	4	5	65	88	100	35	22	22	34	24	25	2	—	—	3	3	9
New York	32	30	42	267	296	377	17	13	27	17	15	31	23	32	30	256	256	299
North Carolina	93	120	153	177	157	140	—	1	1	1	1	1	21	27	20	32	23	35
North Dakota	444	157	383	6	11	15	72	42	68	86	50	107	55	59	59	35	43	49
Ohio	418	237	349	239	217	305	10	4	2	10	2	5	179	145	122	88	101	88
Oklahoma	61	66	101	128	161	201	34	31	32	35	38	46	16	19	22	3	2	5
Oregon	77	66	71	125	126	169	129	122	145	167	152	190	3	4	1	22	23	17
Pennsylvania	54	54	85	389	375	401	23	39	34	23	40	36	120	83	104	182	170	195
Rhode Island	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
South Carolina	36	65	110	66	50	67	—	1	1	—	1	1	14	21	14	8	5	14
South Dakota	270	175	299	26	36	61	77	79	106	108	90	146	92	140	144	74	134	138
Tennessee	45	65	98	182	187	169	—	1	2	—	1	2	59	57	65	19	23	46
Texas	152	150	253	280	281	480	20	18	36	21	20	43	55	54	62	16	8	17
Utah	7	3	6	129	145	148	30	52	35	36	57	50	8	7	9	21	32	28
Vermont	1	—	—	49	34	39	3	3	3	4	2	3	—	—	1	61	67	55
Virginia	24	33	76	146	129	112	3	1	2	3	2	1	25	21	26	48	52	48
Washington	67	111	91	106	179	142	62	81	86	76	94	108	1	1	2	23	28	43
West Virginia	1	—	—	81	59	72	—	—	—	—	—	—	11	9	6	12	10	11
Wisconsin	122	73	164	496	458	808	82	98	130	89	97	139	151	107	144	528	530	685
Wyoming	6	5	6	58	58	58	46	50	46	50	59	72	3	3	3	3	1	2
U.S. Govt.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Miscellaneous ⁴	—	—	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTAL	7,172	5,995	9,110	5,352	5,735	7,123	1,287	1,420	1,646	1,501	1,611	2,130	2,478	2,656	2,485	2,280	2,405	2,801

SOURCE: Equipment Manufacturers Institute (formerly Farm & Industrial Equipment Institute).

NOTES: ¹Includes revisions for prior months. ²For making bales of under 200 lbs. ³Pull-type, mounted or self-propelled. ⁴Sales reported as miscellaneous retail sales which cannot be classified by state or as U.S. Government. They include sales and dispositions that do not go through usual marketing channels, such as gifts to non-profit organizations, intra-plant or company transfers, etc.

Dollar Value of Farm Equipment Imports by Country of Origin, Jan., 1985-June, 1990

(In Thousands)

Country	Jan.-Dec. 1985	Jan.-Dec. 1986	Jan.-Dec. 1987	Jan.-Dec. 1988	Jan.-Dec. 1989	Jan.-Dec. 1990
Canada	\$415,527	\$366,074	\$497,337	\$575,949	\$554,118	\$275,583
Mexico	8,159	6,218	11,419	37,008	32,041	15,376
Brazil	12,214	10,967	18,877	27,632	29,732	12,684
Sweden	3,464	4,538	4,731	4,805	4,554	2,995
Denmark	9,331	7,290	9,676	13,106	9,055	10,591
Netherlands	33,945	29,778	31,513	33,422	28,841	24,547
United Kingdom	207,020	234,406	256,182	366,337	378,660	184,765
Belgium	29,389	42,537	46,125	64,028	67,283	61,926
France	68,681	64,556	64,776	118,789	118,590	76,364
West Germany	222,756	252,740	244,560	289,718	326,937	263,478
Austria	2,540	3,455	4,480	6,279	3,566	9,710
Yugoslavia	205	1,251	7,766	8,968	5,343	2,338
Hungary	5,444	1,816	5,917	5,620	13,136	5,851
Czechoslovakia	5,926	6,197	3,759	6,849	7,085	6,354
Romania	4,409	1,921	5,326	5,710	5,208	2,816
Italy	122,300	118,808	128,651	154,915	158,473	91,587
Spain	3,996	5,978	6,254	7,436	9,198	3,135
Israel	7,619	7,475	8,629	9,171	9,274	4,931
New Zealand	10,725	8,123	11,012	12,903	6,375	3,141
Australia	5,421	5,941	7,159	8,429	9,548	2,507
Japan	355,577	418,780	420,852	388,774	370,349	186,902
China (Taiwan)	5,132	6,066	7,297	8,322	9,501	4,387
China (P.R.C.)	2,568	3,002	5,408	6,345	4,302	2,728
Korea	1,256	5,667	7,456	19,842	29,136	18,811
Soviet Union	1,266	3,731	5,394	9,599	12,127	11,062
TOTAL	\$1,557,623	\$1,630,628	\$1,834,925	\$2,206,957	\$2,229,902	\$1,309,076

Source: U.S. Department of Commerce, International Trade Administration, Office of Capital Goods and International Construction.

Imports of Farm Equipment by Product, 1986-1990

Product	Jan.-Dec. 1986		Jan.-Dec. 1987		Jan.-Dec. 1988		Jan.-Dec. 1989		Jan.-June 1990	
	Quantity	Value in Thousands of Dollars	Quantity	Value in Thousands of Dollars	Quantity	Value in Thousands of Dollars	Quantity	Value in Thousands of Dollars	Quantity	Value in Thousands of Dollars
Knives & Cutting Blades.....	8,741,126	\$ 8,202	9,628,822	\$ 10,497	8,293,169	\$ 10,156	9,269,758	\$ 12,943	7,074,490	\$ 17,586
Plows & Listers.....	3,363	7,962	5,532	11,246	2,482	8,429	8,484	18,059	3,691	9,841
Cultivators & Weeders.....	32,017	25,127	52,430	30,088	56,922	32,044	31,449	51,788	29,217	30,270
Parts of Plows, Cultivators, Weeders & Listers.....	—	23,536	—	30,362	—	41,256	—	29,713	—	13,033
Harrows, Rollers, Stalk Cutters, Soil Pulverizers.....	32,442	16,987	23,565	24,614	33,147	27,020	39,455	9,543	12,181	5,954
Parts of Harrows, Rollers, Stalk Cutters, etc.....	—	12,157	—	24,224	—	31,567	—	64,311	—	33,411
Planting, Seeding & Fertilizing Machinery.....	30,288	24,074	34,137	31,550	44,900	28,168	75,907	42,547	67,189	31,404
Parts of Planting, Seeding & Fertilizing Machinery.....	—	9,858	—	11,107	—	11,130	—	16,390	—	9,125
Haying Machinery other than Mowers.....	5,347	10,588	7,650	8,002	8,217	10,561	10,604	10,671	9,654	9,617
Mowers except Lawn Mowers.....	19,060	30,191	21,865	33,601	36,236	46,867	33,020	49,795	13,066	27,777
Harvesting Machines, NEC.....	6,858	47,808	8,248	58,184	8,624	55,789	5,106	25,627	3,504	17,756
Parts of Harvesting Machines.....	—	57,807	—	61,911	—	82,905	—	89,079	—	45,664
Farm Wagons & Carts.....	3,455	3,345	3,595	4,006	4,839	6,828	15,195	6,138	2,284	2,042
Agricultural Machines & Implements, NEC.....	—	143,876	—	161,517	—	184,730	—	192,247	—	122,862
Parts of Agricultural Machines.....	—	82,488	—	129,033	—	151,677	—	123,479	—	75,193
Tractors, Agricultural, Wheel-Type New, excluding Industrial*.....	127,964	807,047	130,734	866,824	101,922	1,056,533	96,466	1,122,068	58,004	672,065
Parts for Agri. Tractors.....	—	278,482	—	299,551	—	384,454	—	255,603	—	126,579
Walk-Behind Rotary Tillers.....	16,035	2,470	11,545	3,302	16,431	6,068	39,126	6,381	12,352	3,323

Source: U.S. Department of Commerce, International Trade Administration, Office of Capital Goods and International Construction. *Use of the term "industrial" here is understood to refer to such machines as forklifts but not to industrial tractors as commonly defined in the farm and industrial equipment industry. NEC — Not Elsewhere Counted.

New Agricultural Tractor Imports, Jan. 1989-June, 1990

(In Units)

Country of Origin	Under 40 HP		40-79 HP		80-99 HP		100 HP & Over		Other*		Totals
	Jan.-June, 1989	Jan.-June, 1990	Jan.-June, 1989	Jan.-June, 1990	Jan.-June, 1989	Jan.-June, 1990	Jan.-June, 1989	Jan.-June, 1990	Jan.-June, 1989	Jan.-June, 1990	
Belgium.....	—	845	45	1,250	95	2,235	—	—	—	—	2,235
Brazil.....	—	52	13	31	20	116	—	—	—	—	116
Canada.....	4	85	9	57	1	156	—	—	—	—	156
China.....	93	12	—	—	—	105	—	—	—	—	105
Czechoslovakia.....	169	556	25	54	—	804	—	—	—	—	804
France.....	—	19	23	222	198	462	—	—	—	—	462
Germany, West.....	82	5,926	2,967	360	586	9,921	—	—	—	—	9,921
Italy.....	59	279	188	296	430	1,252	—	—	—	—	1,252
Japan.....	21,934	1,424	140	23	1,623	25,144	—	—	—	—	25,144
Korea.....	250	—	—	6	457	713	—	—	—	—	713
Mexico.....	—	395	80	—	—	475	—	—	—	—	475
Netherlands.....	—	—	—	2	15	17	—	—	—	—	17
Romania.....	—	777	—	—	—	777	—	—	—	—	777
Soviet Union.....	1,067	227	1,167	5	—	2,466	—	—	—	—	2,466
United Kingdom.....	1,641	8,164	1,891	79	319	12,094	—	—	—	—	12,094
Yugoslavia.....	—	182	—	—	—	182	—	—	—	—	182
Totals.....	25,825	19,279	6,548	2,386	3,966	58,004					
Belgium.....	11	895	3	1,682	10	2,601	—	—	—	—	2,601
Brazil.....	—	610	50	118	27	805	—	—	—	—	805
Canada.....	38	336	17	86	1,927	2,404	—	—	—	—	2,404
China.....	140	—	—	2	40	146	—	—	—	—	146
Czechoslovakia.....	345	537	74	17	—	973	—	—	—	—	973
France.....	4	105	102	343	301	855	—	—	—	—	855
Germany, West.....	70	9,191	3,205	193	346	13,005	—	—	—	—	13,005
Italy.....	541	553	165	504	997	2,760	—	—	—	—	2,760
Japan.....	31,079	2,699	281	1,341	3,840	39,240	—	—	—	—	39,240
Korea.....	235	—	—	8	829	1,072	—	—	—	—	1,072
Mexico.....	5	1,325	127	120	3	1,580	—	—	—	—	1,580
Netherlands.....	8	—	—	4	35	47	—	—	—	—	47
Romania.....	57	1,329	—	—	—	1,386	—	—	—	—	1,386
Soviet Union.....	388	87	1,402	261	571	2,709	—	—	—	—	2,709
United Kingdom.....	4,874	15,469	3,137	212	1,296	24,988	—	—	—	—	24,988
Yugoslavia.....	86	564	—	—	197	847	—	—	—	—	847
Totals.....	38,175	33,997	8,563	4,895	10,846	96,476					

Source: U.S. Department of Commerce, International Trade Administration, Office of Capital Goods and International Construction.

*For 1989 and 1990 "Other" includes units whose horsepower is not specifically provided, tractors without power take off and garden tractors, but not rotary tillers. Totals include countries not individually listed.

Shipments Of Farm Machines And Equipment In Units (1984-1989)

Type of farm equipment	1989	1988	1987	1986	1985	1984
Balers, hay (all types):	33,409	25,974	18,002	10,556	7,542	10,106
Blowers (includes forage type, combination grain-forage type)	3,104	3,773	2,907	2,375	2,636	3,939
Cabs, farm tractor	NA	NA	3,499	2,027	2,932	8,397
Cabs, other equipment	NA	NA				580
Combines, grain, pull-type and self-propelled	11,525	7,573	9,484	8,288	7,027	11,296
Combine corn and grain heads*	20,402	14,302	4,485	4,291	2,829	4,388
Cultivators, corn and cotton types	13,113	10,154	6,906	4,110	8,168	9,419
Cultivators, field:						
Pull-type, folding	6,403	4,207	2,940	1,504	3,897	6,655
Mounted and non-folding pull type	NA	NA	1,258	1,313	1,646	2,740
Cultivators, rotary	3,708	2,062	1,072	1,058	3,282	5,028
Cultivators and weedeers, other	9,148	5,296	10,901	11,891	12,818	17,040
Cutters and shredders or rotary mowers (pto):						
Flail-type	3,772	4,879	2,913	1,434	4,523	19,786
Horizontal blade-type	231,683	229,498	140,562	100,854	98,459	94,452
Diggers (shakers, windrowers), combines, peanut	2,888	1,422	1,031	1,148	1,296	1,145
Distributors (fertilizer):						
Dry	19,525	15,862	5,206	4,545	6,143	8,205
Liquid	3,490	3,317	2,031	2,470	4,715	7,581
Anhydrous ammonia	NA	973	933	1,247	1,563	2,359
Dryers, grain, hay and seed batch type, pto or electric-motor operated	2,153	1,362	2,455	3,900	3,983	1,658
Continuous flow-type	801	556	544	765	695	942
Heated air units	2,447	2,005	3,588	6,378	9,818	7,198
Dusters, power, all types	NA	944	1,277	901	971	134
Elevators, portable:						
Single chain	1,490	1,726	1,627	1,467	2,839	3,057
Double chain	2,047	6,707	6,139	8,482	5,887	1,796
Auger-type, 6-in. dia.	7,499	7,947	9,269	8,188	7,939	11,468
Auger-type, 6-in. dia.	3,329	6,345	7,434	8,641	6,578	6,351
Auger-type, over 6-in. dia.	11,863	11,221	9,776	8,953	7,167	9,928
Elevators, stationary and other	7,029	7,045	44,404	60,069	37,749	36,229
Fans, crop drying and aeration	8,664	8,430	22,151	37,123	12,850	9,851
Grain drills, fixed-frame, all types	11,405	6,439	5,113	4,492	7,159	12,782
Grain heads for combines			9,212	9,835	9,978	14,151
Grinder-mixers, stationary and portable	3,718	4,211	3,406	1,717	1,467	2,907
Harrow, disk	13,234	17,892	11,498	12,048	17,908	25,330
Harrow sections (spike, spring, tine-tooth and power)	25,536	23,508	17,052	15,274	21,068	42,482
Harrow, other, rollers, pulverizers	7,564	7,330	7,583	6,325	9,388	19,051
Harvesters, beet and potato	317	289	260	195	345	486
Harvesters, forage, shear-bar type, self-propelled and pull	3,958	3,508	2,186	1,997	2,647	3,707
Harvesting machinery, other	4,080	4,242	2,915	2,986	4,073	3,989
Levelers or scrapers	2,601	1,829	2,065	1,992	2,034	4,199
Loaders, field, for baled hay	963	1,337	1,513	1,143	1,488	1,916
Loaders, tractor mounted, farm	16,425	27,494	14,078	20,960	17,900	26,153
Mills, feed, farm size (includes grinders and crushers of the hammer, burr or roller types)	2,301	2,322	2,537	2,073	2,416	2,623
Mixers, feed, farm size	2,343	2,646	1,983	1,360	1,671	1,894
Mixers, cutter bar-type	5,047	3,143	2,302	2,665	3,934	5,443
Mower-conditioners, self-propelled and pull-type	15,988	13,821	10,733	10,556	12,397	19,218
Planters, row crop, all types (quantity in number of rows)	38,926	19,734	34,352	20,311	37,417	58,674
Plows, chisel or sweep type:						
Pull-type	2,762	2,771	1,924	1,875	2,389	4,001
Mounted	2,192	1,825	1,777	930	1,477	2,065
Plows, disk-chisel combination	2,774	2,507	1,904	1,911	2,976	4,763
Plows, subsoiler	2,947	2,102	1,202	1,000	2,208	(NA)
Plows, tilling and ditching	383	1,663	294	417	753	1,029
Plows, moldboard, all types	859	760	1,327	1,902	1,902	4,566
Plows, middle busters and disk bedders	2,181	1,849	1,495	1,853	2,469	6,483
Rakes, hay, side-delivery	10,925	7,127	4,173	5,339	8,072	9,069
Sprayers, field and row crop type:						
Power, self-propelled	2,560	1,808	1,151	1,057	1,898	1,740
Power, tractor-mounted	10,640	9,513	8,417	8,604	14,146	17,205
Power, non-tractor-mounted	3,856	3,597	4,195	4,438	5,127	6,492
Sprayers, power, not held or row crop type	7,212	6,458	6,167	6,122	4,674	4,930
Sprayers, power, air-carried	2,762	2,310	1,647	1,993	2,603	3,650
Spreaders, manure						
Conveyor type	10,664	11,543	9,379	8,279	6,586	8,018
Tank type	2,869	2,840	2,415	2,440	2,371	3,448
Terracers, blade, or scrapers	32,874	32,862	54,879	43,679	48,071	50,645
Tillage equipment, combination roller/harrow, disk or coulter, field cultivators, disk or coulter/spring tooth	6,190	4,053	2,868	3,530	5,094	5,341
Tool bars, basic units, pull, mounted	1,413	1,572	1,402	1,511	1,729	1,663
Tractors, wheel, farm-type, 2-wheel drive, including front-wheel assist:						
Under 100 pto horsepower	NA	NA	9,323	13,017	12,653	15,706
100 pto horsepower and over	NA	NA	9,393	9,316	16,072	30,310
4-wheel drive	NA	NA	3,656	1,893	2,624	4,955
Wagons, farm type, chassis only, and trailer gear	31,931	28,728	23,511	18,411	17,442	24,471
Wagon boxes and racks for mounting on wagons and trailer gear						
Manual unloading or dump	14,985	15,219	15,365	13,013	14,032	14,423
Gravity unloading, grain type	11,153	10,870	8,383	7,545	5,712	6,687
Power unloading	14,311	11,977	9,667	8,694	7,912	9,304
Wagon boxes with integral running gear	2,293	2,739	2,646	1,818	2,205	2,380

*Figures for combine corn and grain heads listed together for 1988 and 1989, separately in prior years.

SOURCE: U.S. Department of Commerce Census Bureau Current Industrial Report MA35A (89)-1, "Farm Machinery and Garden Equipment," issued October 1990, and previous years' MA35A reports. In some categories, I&T has combined data to save space.

Value of U.S. Farm Equipment Exports of Destination, (Value in Thousands)

Country	1986	1987
Western Hemisphere		
Canada	\$649,405	\$646,049
Mexico	76,496	67,894
Guatemala	5,034	4,603
Honduras	3,486	4,761
El Salvador	2,471	2,366
Costa Rica	3,718	3,954
Panama	5,057	7,811
Dominican Republic	11,925	14,502
Colombia	12,349	17,973
Jamaica	2,537	5,797
Venezuela	54,116	57,265
Brazil	18,447	22,619
Argentina	4,695	15,417
Bolivia	3,127	2,115
Chile	5,638	8,462
Ecuador	11,044	6,051
Peru	6,131	5,812
Paraguay	3,156	2,874
Europe		
Denmark	2,933	5,797
Sweden	3,366	9,882
United Kingdom	53,344	63,063
Netherlands	12,463	12,052
Belgium-Luxembourg	40,770	49,830
France	68,371	95,630
West Germany	51,695	55,058
Hungary	13,151	8,763
Switzerland	2,701	2,149
Spain	20,838	22,150
Italy	13,150	13,218
Greece	5,045	2,169
Soviet Union	10,673	1,175
Yugoslavia	2,924	1,616
Middle East		
Israel	7,459	7,232
Saudi Arabia	73,559	115,555
Turkey	3,534	4,905
Jordan	942	2,938
Asia and Pacific		
Thailand	942	1,590
Singapore	5,264	8,057
China (Taiwan)	2,727	3,304
China (P.R.C.)	11,950	9,634
Philippines	2,297	2,525
Korea	2,706	5,929
Japan	18,876	25,949
Australia	47,670	49,110
New Zealand	2,706	2,108
Africa		
Algeria	6,168	4,680
Morocco	526	4,156
Sudan	3,811	5,902
Nigeria	5,967	4,483
Egypt	15,876	4,680
Rep. South Africa	25,011	24,034
Total U.S. Exports, Farm & Industrial Equipment	\$1,409,690	\$1,579,894

Source: U.S. Department of Commerce, International Trade and International Construction.

Value of Shipments, 1984-1989

Farm Tractors, Farm Machinery and Garden Equipment Including Parts, Attachment

(In Thousands of Dollars)

Type of product	1989	1988	1987	1986	1985	1984
Wheel tractors farm type.....	NA*	NA*	958,597	893,432	1,154,527	2,045,298
Planting, seeding and fertilizing machinery.....	632,247	508,566	409,082	371,210	453,250	601,099
Harrows, rollers, pulverizers, stalk cutters.....	206,283	136,923	99,918	99,238	166,014	242,884
Plows.....	136,770	117,725	74,643	75,310	110,984	152,464
Harvesting machinery.....	1,860,432	1,422,751	1,282,315	1,230,124	1,190,831	1,424,639
Haying machinery.....	732,250	574,587	433,671	383,434	498,116	611,568
Farm dairy machines and equipment.....	110,050	95,492	76,584	77,131	92,308	105,430
Sprayers and dusters.....	302,022	274,994	214,484	212,566	244,412	252,992
Farm elevators and blowers.....	59,358	64,342	73,648	82,047	66,877	69,773
Cultivators and weedeers.....	202,037	154,471	104,619	81,103	139,985	175,355
Machines for preparing crops for market or use.....	208,641	193,275	208,189	203,657	193,727	197,790
Farm poultry equipment.....	157,762	144,149	116,763	93,420	109,000	120,646
Hog equipment.....	64,718	75,717	66,415	41,964	35,938	44,038
Other barn and barnyard equipment.....	215,582	214,133	164,142	129,146	156,768	168,912
Stalk shredders and cutters or rotary mowers.....	192,460	197,576	161,462	112,073	120,581	126,797
Farm wagons, other farm transportation equipment.....	2,207,172	1,725,202	149,217	109,291	105,480	133,386
Irrigation systems.....	377,790	298,307	215,689	160,417	186,654	364,138
Total farm machinery.....	NA	NA	5,324,025	4,355,565	5,402,166	7,170,967
Total agricultural equipment.....	8,297,091	6,793,254	6,282,621	5,248,997	6,556,698	9,216,265
Commercial turf, mowing equipment.....	496,797	473,509	416,240	347,482	316,566	280,891
Other turf, grounds care equipment.....	129,720	121,535	98,346	65,354	59,148	52,872
Total commercial grounds equipment.....	626,517	595,044	514,586	412,836	376,704	333,763
Consumer nonriding lawn, garden, snow equipment.....	1,976,326	1,993,863	1,911,663	1,743,210	1,688,642	1,614,573
Consumer riding lawn, garden, snow equipment.....	1,767,916	1,943,096	2,068,286	1,642,630	1,466,472	1,363,481
Total lawn & garden equipment.....	3,744,242	3,936,959	3,979,949	3,385,840	3,155,114	2,978,045
Total farm tractors, farm machinery, commercial and consumer equipment.....	12,036,333	10,730,213	9,303,973	9,047,653	10,088,611	12,528,073

*Tractors included with "Farm Wagons, other farm transportation equipment" for 1988 and 1989.

SOURCE: U.S. Department of Commerce Census Bureau Current Industrial Report MA35A(89)-1, "Farm Machinery and Garden Equipment," issued October 1990, and previous years' MA35A reports.

& Industrial by Countries 1986-1990

of Dollars)

1988	1989	Jan.-June, 1990
\$584,645	\$724,437	\$457,866
121,734	142,873	106,621
5,214	8,853	3,491
6,193	7,138	2,548
2,230	3,371	835
5,171	6,775	3,090
3,449	4,048	2,051
19,819	16,698	8,204
17,050	15,879	8,366
3,109	10,147	4,098
62,649	22,786	8,759
24,968	21,076	10,098
8,089	6,689	2,325
657	1,219	973
12,332	16,975	9,122
7,035	17,186	5,471
9,357	4,187	3,848
1,072	644	566
8,918	9,459	4,684
26,197	24,494	15,674
98,173	106,960	64,564
18,096	18,531	15,945
82,298	84,919	48,443
128,925	161,346	87,924
75,788	78,791	52,861
4,626	27,089	7,051
3,795	5,287	4,430
25,172	40,192	20,127
20,352	22,865	18,764
19,936	16,345	4,196
8,602	2,700	2,270
5,417	1,631	3,721
7,341	6,952	5,149
129,930	97,384	41,240
5,210	2,810	618
2,574	1,526	514
4,212	4,265	1,939
10,967	51,697	24,272
5,627	12,161	6,229
10,096	13,430	6,848
4,838	5,098	1,014
15,053	18,414	11,238
35,305	86,141	54,331
121,834	208,739	101,758
3,022	7,154	3,803
5,855	3,242	405
3,696	1,421	499
5,623	3,161	1,254
3,408	4,265	1,253
3,316	6,564	4,732
40,583	38,768	17,096
\$1,911,409	\$2,302,808	\$1,349,315

Administration, Office of Capital Goods

Exports of Farm Equipment by Product, 1987-1990

Product	Jan.-Dec. 1987		Jan.-Dec. 1988		Jan.-Dec. 1989		Jan.-June 1990	
	Quantity	Dollar Value in Thousands	Quantity	Dollar Value in Thousands	Quantity	Dollar Value in Thousands	Quantity	Dollar Value in Thousands
Combines, pull-type.....	1,734	\$34,099	644	\$9,766	1,228	\$17,501	530	\$14,447
Combines, self-propelled.....	3,623	135,010	2,333	96,119	5,261	160,057	1,928	90,268
Cultivators, tractor-drawn or mounted.....	968	2,295	1,748	4,332	2,585	5,109	625	948
Cultivators, NEC, and Weedeers.....	3,713	4,812	6,031	6,902	4,728	7,416	9,143	40,357
Farm Elevators and Blowers.....	1,498	3,795	1,866	5,326	NA	NA	NA	NA
Farm Wagons and Carts.....	1,197	2,041	1,863	4,490	2,488	5,688	—	—
Parts for Farm Wagons and Carts.....	—	952	—	709	—	2,815	—	—
Fertilizing Machines.....	4,461	9,772	5,055	10,906	8,532	13,942	5,191	10,400
Forage Harvesters.....	1,046	22,655	1,878	30,355	1,677	32,209	963	19,126
Harrows, Disk.....	920	3,524	1,316	4,649	1,960	6,403	998	3,458
Harrows, NEC, & Soil Pulverizers.....	4,688	5,030	8,786	8,145	5,616	5,079	3,028	3,199
Parts for Harrows, Stalk Cutters & Soil Pulverizers.....	—	3,816	—	3,293	—	5,817	—	1,445
Harvesting Machines, NEC.....	3,603	38,503	3,915	63,930	2,399	42,473	920	10,877
Harvesting Machine Parts.....	—	115,839	—	53,509	—	44,206	—	50,261
Hay Balers.....	5,429	41,400	9,033	54,993	9,765	60,693	4,930	44,618
Haying Machines, NEC (incl. rakes & tedders).....	2,439	17,655	3,460	18,954	4,830	29,538	2,757	21,481
Parts for Haying Machine.....	—	15,703	—	23,278	—	20,510	—	10,674
Mowers, Cutterbar, tractor-drawn.....	985	3,042	1,659	4,930	7,102	12,649	9,107	19,776
Mowers, Rotary, tractor-drawn (excl. lawn mowers).....	11,388	5,953	14,057	8,504	39,172	20,075	10,978	6,951
Mowers, NEC, tractor-drawn (excl. lawn mowers).....	1,480	6,597	3,335	7,773	2,231	6,930	381	1,049
Planting Machines.....	2,134	7,216	1,818	7,152	3,260	11,027	2,356	8,349
Plows, Disk.....	669	1,651	597	1,511	517	1,843	270	678
Plows, Moldboard.....	1,380	4,358	1,122	4,320	394	1,903	259	1,130
Plows & Listers, NEC.....	4,247	7,609	4,369	9,083	5,403	15,190	1,674	4,853
Parts for Plows, Listers, Cultivators & Weedeers.....	—	9,393	—	9,922	—	9,328	—	1,660
Seeding Machines.....	4,591	9,637	3,984	11,469	6,340	17,193	5,143	16,234
Parts for Planting, Seeding & Fertilizing Machines.....	—	9,763	—	17,761	—	15,853	—	10,062
Sprayers, Agricultural, including parts.....	—	179,147	—	227,752	—	294,425**	—	206,039
Farm Tractors:								
Under 40 PTO HP.....	881	4,862	730	3,582	6,805*	30,165*	39,213*	10,795
40-59 PTO HP.....	395	4,688	211	2,378	177	1,850	108	1,364
60-79 PTO HP.....	247	3,531	212	2,551	125	1,983	58	1,131
80-99 PTO HP.....	375	9,075	158	3,238	93	2,445	100	3,466
100-119 PTO HP.....	429	13,629	1,016	32,855	1,050	34,753	551	18,169
120-139 PTO HP.....	825	29,019	1,597	56,292	2,039	67,530	836	31,524
140-159 PTO HP.....	655	24,101	1,353	52,073	2,184	80,612	854	36,221
160-179 PTO HP.....	1,029	43,592	804	33,914	1,303	54,961	506	23,054
180 PTO HP & Over.....	912	59,430	1,016	56,686	2,051	107,834	1,133	68,713
Other Farm Tractors.....	2,544	26,711	2,306	31,617	2,815	25,731	2,099	37,407
Parts for Farm Tractors.....	—	517,150	—	680,695	—	621,271	—	263,791

SOURCE: U.S. Department of Commerce, International Trade Administration, Office of Capital Goods and International Construction. *1989 and 1990 data appear to include garden tractors. **Includes irrigation equipment.

NEC - Not Elsewhere Counted.

INDUSTRY UPDATE

U.S. Tractor Sales Rebound In October

After a sharp nosedive in September, U.S. sales of 4-wheel drive tractors rose smartly in October, representing a bright spot in a machinery market that may be recovering from a downward trend that began in August, apparently in response to Iraq's invasion of Kuwait and the subsequent U.S. military response. Figures from the Equipment Manufacturers Institute flash report, showed combine sales down for September and October, but up for the year as a whole. Total tractor sales through October remained about equal to 1989, but with upturns in the higher-dollar brackets above 40 hp. Weak sales for under-40-hp units generally reflect the soft housing market rather than the agricultural market.

U.S. - UNIT RETAIL SALES

Equipment	October			January-October			September 1990 Inventory
	1990	1989	% Change	1990	1989	% Change	N.A. Factory & U.S. Field
Farm Wheel Tractors:							
2-Wheel Drive							
Under 40 HP	2,812	4,019	(30.0)	37,569	42,047	(10.6)	41,461
40 & Under 100 HP	3,285	3,108	5.7	33,100	29,904	10.7	23,575
100 HP & Over	2,566	2,670	(3.9)	17,291	16,426	5.3	15,907
Total 2-Wheel Drive	8,663	9,797	(11.6)	87,960	88,377	(.5)	80,943
Total 4-Wheel Drive	618	488	26.6	4,147	3,371	23.0	2,742
Total Farm Wheel Tractors	9,281	10,285	(9.8)	92,107	91,748	.4	83,685
Combines:							
(Self-Propelled)	1,381	1,707	(19.1)	8,140	7,133	14.1	5,527

U.S. - UNIT RETAIL SALES

Equipment	September			January-September			August 1990 Inventory
	1990	1989	% Change	1990	1989	% Change	N.A. Factory & U.S. Field
Farm Wheel Tractors:							
2-Wheel Drive							
Under 40 HP	2,982	3,811	(21.8)	34,729	38,028	(8.7)	41,294
40 & Under 100 HP	2,550	2,524	1.0	29,831	26,796	11.3	22,793
100 HP & Over	1,169	1,760	(33.6)	14,727	13,756	7.1	14,762
Total 2-Wheel Drive	6,701	8,095	(17.2)	79,287	78,580	.9	78,849
Total 4-Wheel Drive	195	318	(38.7)	3,529	2,883	22.4	2,584
Total Farm Wheel Tractors	6,896	8,413	(18.0)	82,816	81,463	1.7	81,433
Combines							
(Self-Propelled)	1,167	1,253	(6.9)	6,764	5,426	24.7	5,482

MEASURE RPM INSTANTLY Pioneer Model DT36M Digital TACHOMETER

Continuous Digital Readout
60 to 50,000 RPM
Visible Light Beam makes aiming easy
No Wires or Mechanical Connections Required
Memory stores last reading

with memory

A highly accurate photoelectric digital display tachometer incorporating Pioneer's own patented circuitry. Accuracy: ± 1 RPM over entire range • Large 5 Digit LCD Display • Crystal Controlled Time Base for stability • Battery operated using 2-1.5 V "AA" batteries 1-9V alkaline battery • No calibration required



Made in U.S.A.
*U.S. Pat.
4,031,466

Circle (11) on Reply Card

VISIBLE
LIGHT
BEAM MAKES
AIMING EASY



INSTANT RPM READOUT Pioneer Model 36 TACHOMETER

NO WIRES • NO CONNECTIONS
MEASURES SPEEDS UP TO 12,000 RPM
ACCURACY TO $\pm 2\%$ FULL SCALE

Self contained, Pioneer Tachometers are easy to use. Hold like a flashlight, point at rotating object, press a button and get an instant reading on the dial. No contact necessary.
IMMEDIATE DELIVERY

Circle (12) on Reply Card

THE

PIONEER

ELECTRIC & RESEARCH CORPORATION
7333 W. Harrison St. • Forest Park, IL 60130 / Phone: 708-771-8242

WE'LL CUT YOU DOWN TO SIZE

Cut To Length Orders

We now have 5 DoALL® Band Saws with cutting capabilities ranging from 1/2"-24" with cutting tolerance of $\pm 1/8"$. We can saw cut through 24" or torch cut through 60" carbon steel pipe. Pipe can be piece marked for easy identification and shipped to you in 5 days or less!

No Waste. No Scrap. No Labor Cost.

If the job calls for pipe, call Saginaw Pipe!

1-800-433-1374

SAGINAW PIPE

P.O. Box 8, Highway 31 South, Saginaw, Alabama 35137 • (205) 664-3670

*Registered Trademark of DoALL GULF CO.

Circle (13) on Reply Card

Canadian Results: General Slump

Tractor and farm machinery sales in Canada weakened in August and September against the results seen in 1989, with sales down for the year in all categories except 4WD tractors, forage harvesters and mower conditioners.

Canada Report Retail Sales In Units

Equipment	August			August/YTD		
	1990	1989	% Chg.	1990	1989	% Chg.
Farm Wheel Tractors						
2WD under 40 H.P.	284	339	-16.2%	2,653	2,738	-3.1%
2WD 40-99 H.P.	523	488	7.2%	4,634	5,021	-7.7%
2WD 100 H.P. & Over	96	144	-33.3%	1,683	1,790	-6.0%
Total 2WD	903	971	-7.0%	8,970	9,549	-6.1%
Total 4WD	89	70	27.1%	1,158	897	29.1%
Total Farm Wheel Tractors:	992	1,041	-4.7%	10,128	10,446	-3.0%
COMBINES						
Self Propelled	254	333	-23.7%	703	689	2.0%
Pull Type	47	214	-78.0%	105	373	-71.8%
BALERS						
Rectangular Balers	162	184	-12.0%	928	1,065	-12.9%
Round Balers	585	647	-9.6%	2,942	2,915	0.9%
SWATHERS						
Self Propelled	194	274	-29.2%	498	613	-18.8%
Pull Type	415	485	-14.4%	830	1,003	-17.2%
FORAGE HARVESTERS						
Shear Bar Type	79	54	46.3%	388	354	9.6%
MOWER CONDITIONERS						
	475	384	23.7%	2,701	2,584	4.5%

Canada Report Retail Sales In Units

Equipment	September			September/YTD		
	1990	1989	% Chg.	1990	1989	% Chg.
Farm Wheel Tractors						
2WD under 40 H.P.	175	314	-44.3%	2,825	3,052	-7.4%
2WD 40-99 H.P.	428	597	-28.3%	5,054	5,618	-10.0%
2WD 100 H.P. & Over	102	181	-43.6%	1,786	1,971	-9.4%
Total 2WD	705	1,092	-35.4%	9,665	10,641	-9.2%
Total 4WD	75	92	-18.5%	1,233	989	24.7%
Total Farm Wheel Tractors:	780	1,184	-34.1%	10,898	11,630	-6.3%
COMBINES						
Self Propelled	252	357	-29.4%	963	1,046	-7.9%
Pull Type	44	133	-66.9%	134	506	-73.5%
BALERS						
Rectangular Balers	92	120	-23.3%	1,025	1,185	-13.5%
Round Balers	306	402	-23.9%	3,245	3,317	-2.2%
SWATHERS						
Self Propelled	138	174	-20.7%	633	787	-19.6%
Pull Type	246	239	2.9%	1,065	1,242	-14.3%
FORAGE HARVESTERS						
Shear Bar Type	56	53	5.7%	444	407	9.1%
MOWER CONDITIONERS						
	262	207	26.6%	2,977	2,791	6.7%

Source: Canadian Farm & Industrial Equipment Institute.

We got too big for our overalls!

But with the opening of our new South Wing, we got new ones!
Overall, it's the biggest Farm Show ever!

- Overall, a record 830,000 sq. ft. of exhibit space
- Overall, a record 650-plus exhibitors
- Overall, a record 6 display buildings



Feb. 13-16, 1991

Kentucky Fair & Exposition Center, Louisville

Show Times: 9 A.M. - 6 P.M. daily

Admission Free (Parking \$2.00)

Tell me more! Please send me a free brochure for the National Farm Machinery Show and Championship Tractor Pull.

Name _____

Street or P.O. Box _____

City _____ State _____ Zip _____

Mail to: National Farm Machinery Show,
P.O. Box 37130, Louisville, KY 40233
Phone: (502) 366-9592

3



New for '91...Our Family Living Center!

Message Centers sponsored by



The Commonwealth of KENTUCKY

Massey Picks L&G Supplier

MASSEY-FERGUSON is putting its name back in the lawn and garden business, and has selected Ingersoll Equipment Co. as a sole-source supplier of lawn and garden tractors to be sold under the Massey-Ferguson name plate starting with the spring 1991 season.

The new product line will give Massey dealers products ranging from an 8-horsepower rear engine riding lawnmower up to a 180 hp tractor.

Ingersoll, of Winneconne, Wis., was formed from a 1983 buyout of the J.I. Case garden tractor line, which was distinguished by its heavy use of hydraulic drive systems.

In 1979, Snapper bought Massey-Ferguson's yard and garden tractor product line.

Steve McDaniels, Massey's vice president of marketing, said that Massey, having recovered from the farm depression of the 1980s, now "wants to become a more valuable supplier for its dealers by providing a greater assortment of high quality products that fit its dealers needs." He noted that while Massey, with 1,100 dealers, has its traditional base in agricultural and rural areas, Ingersoll, with 500 dealers, is strong in affluent metro suburbs.

McDaniels said there are only about 15 Massey dealers who currently carry the Ingersoll line, and acknowledged that many Massey dealers have taken on other lawn (See INGERSOLL, pg. 31)